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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/673,180      | 09/30/2003  | Toshio Tsujimoto     | 243214US0X          | 1265             |

22850 7590 12/31/2007  
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.  
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ALEXANDRIA, VA 22314

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| EXAMINER |
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SONG, MATTHEW J

|          |              |
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| ART UNIT | PAPER NUMBER |
|----------|--------------|

1792

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|-------------------|---------------|
| NOTIFICATION DATE | DELIVERY MODE |
|-------------------|---------------|

12/31/2007

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com  
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jgardner@oblon.com

|                              |                                      |   |  |
|------------------------------|--------------------------------------|---|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/673,180 | <b>Applicant(s)</b><br>TSUJIMOTO ET AL. |  |
|                              | <b>Examiner</b><br>Matthew J. Song   | <b>Art Unit</b><br>1792                 |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 September 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 28,30,31,33 and 34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 28,30,31,33 and 34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/28/2007 has been entered.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 33-34 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 33 recites, "the silica glass powder layer is amorphous" in lines 1-2. There is no support in the original disclosure for "amorphous" silica. It is noted that this limitation has already been rejected previously as matter in the office action filed 10/17/2006. The original disclosure does not teach amorphous materials. The original disclosure merely teaches

crystallizing silica, without specifically reciting whether the material is amorphous or partially crystallized.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 28, 30-31 and 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohama et al (WO 01/92609 A2) in view of Loxley et al (US 5,389,582).

Ohama et al discloses a multilayer silica crucible comprising a porous silica glass powder outer layer **3a** and a porous silica powder layer **13a** (Abstract, pg 12 and Fig 2(b)), this clearly suggests forming a silica glass powder layer on a part of the surface of the crucible and the silica glass powder layer is porous.

Ohama et al does not teach the claimed silica particle size.

In a method of forming a porous silica crucible, note entire reference, Loxley et al teaches vitreous silica particles having an average particle size of from 1-8 microns (col 6, ln 1-67), this clearly suggests applicants particle size limitation because 100% of silica particles of less than 10 micrometers meets the claimed limitation.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Ohama by using silica particles having a particle size from 1-8 microns, as taught by Loxley et al, because the best crucibles are obtained when the particle size ranges are controlled and a range of 1-8 microns is known to produce good crucibles ('582 col 6, ln 35-45).

Referring to claim 30, the combination of Ohama and Loxley et al teaches a porous silica powder layer **3a** on an outer layer of the crucible layer **13a**. In regards the ring configuration limitation, the combination of Ohama and Loxley et al teaches silica formed on the surface of the crucible, thus the layer is in a ring configuration because of the circular bowl shape of the crucible based on a top view ('180 Figure 1).

Referring to claim 31, the combination of Ohama and Loxley et al teaches a crucible **3a** with a porous powder layer **13a** on an inside surface. In regards the ring configuration limitation, the combination of Ohama and Loxley et al teaches silica formed on the surface of the crucible, thus the layer is in a ring configuration because of the circular bowl shape of the crucible based on a top view ('180 Figure 1).

Referring to claims 33-34, the combination of Ohama and Loxley et al teaches amorphous vitreous silica which crystallized using an aluminum compound ('582 col 9, ln 40 to col 10, ln 40 and '180 pgs 8-9). The starting material is crystallized, thus clearly suggests

amorphous silica based on the same reasoning suggested by applicant for support of amorphous silica.

### ***Response to Arguments***

6. Applicant's arguments with respect to claims 28, 30-31 and 33-34 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Song whose telephone number is 571-272-1468. The examiner can normally be reached on M-F 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on 571-272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number:  
10/673,180  
Art Unit: 1792

Page 6

Matthew J Song  
Examiner  
Art Unit 1792

MJS  
December 19, 2007

*/Robert Kunemund/*

*Robert Kunemund*

*Primary Examiner*

*TC 1700*